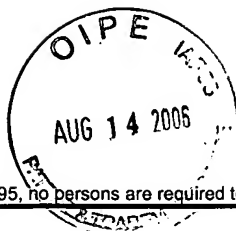


Doc Code: AP.PRE.REQ



PTO/SB/33 (07-05)  
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## PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)

125255-6013011

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August 14, 2006

Signature \_\_\_\_\_

Typed or printed name Adam Dominguez

Application Number

10/660,611

Filed

Sept. 12, 2003

First Named Inventor

Chun Ho FAN

Art Unit

2823

Examiner

B. Kebede

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

- ☐ applicant/inventor.
- ☐ assignee of record of the entire interest.  
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.  
(Form PTO/SB/96)

☒ attorney or agent of record. 39,777  
Registration number \_\_\_\_\_

☐ attorney or agent acting under 37 CFR 1.34.  
Registration number if acting under 37 CFR 1.34 \_\_\_\_\_

Signature

Michael A. Molano

Typed or printed name

(650) 331-2040

Telephone number

August 14, 2006

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below\*.

☐ \*Total of 1 forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: FAN, C.H. ATTORNEY DOCKET: 06013011  
SERIAL NO.: 10/660,611 GROUP ART UNIT: 2823  
FILED: September 12, 2003 EXAMINER: Kebede, B.  
TITLE: IMPROVED BALL GRID ARRAY PACKAGE AND PROCESS FOR  
MANUFACTURING SAME  
DATE: August 14, 2006 CUSTOMER NO.: 43569

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Typed or printed name of person mailing paper or fee:  
Adam Dominquez

\_\_\_\_\_  
Signature Date of Deposit: Aug. 14, 2006

**PRE-APPEAL BRIEF**  
**IN RESPONSE TO FINAL OFFICE ACTION DATED MAY 12, 2006**

Applicants respectfully submit this Pre-Appeal Brief pursuant to the New Pre-Appeal Brief Conference Pilot Program, 1296 Off. Gaz. Pat. Office 67 (July 12, 2005)(as extended by the Extension of the Pilot Pre-Appeal Brief Conference Program dated January 10, 2006).

This Pre-Appeal Brief is in response to the final Office Action dated May 12, 2006 ("Office Action"). This response is made within three months of the mailing date of the Office Action. Accordingly, no fee for an extension of time is believed payable in respect of this communication. If any fee is deemed payable, please charge such a fee to Deposit Account No. 13-0019. Applicants respectfully request reconsideration and allowance of the pending claims.

### **Introduction**

Applicants respectfully submit that, as set forth in detail below, an improper rejection has been made that is erroneously based on a limitation *clearly* not met by a cited reference. Specifically, the Examiner has erroneously anticipated the claimed limitation of “balls...exposed at an *exterior of said integrated package*” with “balls...exposed *within said integrated package*.” This is clear error that the Applicants respectfully request be reviewed by this Panel and determined patentable over the cited reference.

### **Present Application**

The Examiner rejected independent Claim 13 as anticipated under 35 U.S.C. § 102(b) by Huang (US/2002/0113308) (“Huang”). The Examiner further rejected dependent Claims 15-17, 20-22 and 25 as anticipated under 35 U.S.C. § 102(b) by Huang. The Examiner further rejected dependent Claim 23 as obvious under 35 U.S.C. § 103 over Huang in view of Huang (US/6,707,167) (“Huang II”).

Claim 13 calls for balls on the substrate “such that portions of said balls that are disposed farthest from said substrate are exposed at an *exterior of said integrated circuit package*.” (Emphasis added). The Examiner stated that Huang teaches, *inter alia*, Claim 13’s limitation that “the [portions of said] balls (230) that are disposed farthest from the substrate (20) are exposed (see Fig. 1) at and [sic] *exterior of the IC package* (see Fig. 1).” (Emphasis added.) The Examiner’s interpretation of Huang is clearly erroneous for at least three reasons.

First, the Examiner’s interpretation of Huang is contradicted by the Huang disclosure. Second, the Examiner’s interpretation of Huang is contradicted by Huang’s Figure 1, to which the Examiner cited. Third, the Examiner’s interpretation of Huang is contradicted by Huang’s Figure 2. Each of these reasons are explained more fully below.

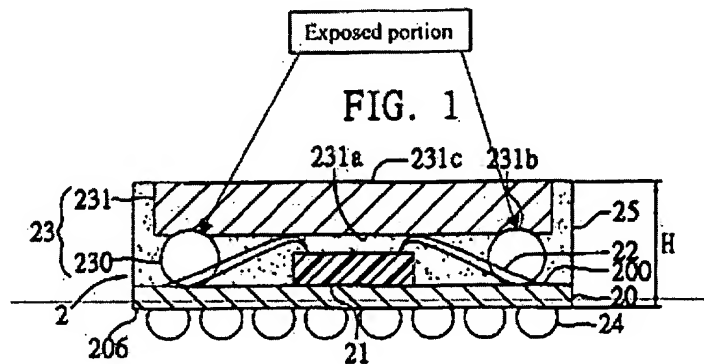
### **Remarks/Argument**

#### **I. The Examiner’s interpretation of Huang is contradicted by Huang’s disclosure.**

Huang defines an IC package to include a “heat dissipating structure 23.” Huang at ¶ [0024]. Huang also uses element 2 with a freestanding arrow in FIG. 1 to point to the entire IC package. Huang at Fig. 1. The upper side (231*c*) of the heat sink (231) in the heat dissipating structure (23) “is exposed to outside the encapsulant 25 and in direct contact with the atmosphere.” Huang at ¶ [0031]. However, the balls are *below* the heat sink: “a heat sink 231 is mounted on the solder balls 230 with a plurality of recesses 231*b* formed *on a lower side 231a of the heat sink 231 at positions corresponding to the solder balls 230*.” Huang at ¶ [0028] (emphases added). Clearly, the balls are not at an “exterior” of the IC package 2, but within the IC package 2. This is clear error that the Applicants request be reconsidered by this Panel and found not met by Huang.

**II. The Examiner's interpretation of Huang is contradicted by Figure 1 from Huang.**

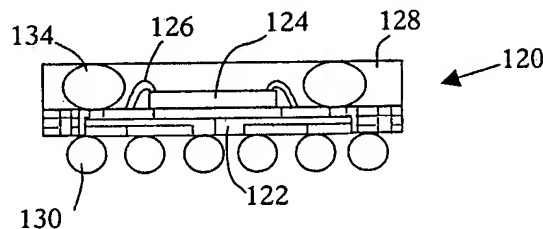
Huang's disclosure can most clearly be seen in Huang's Figure 1, which the Examiner reproduced and annotated in the May 12, 2006 Office Action as follows:



It can clearly be seen that the tops of the balls (230) disposed farthest from the substrate are plainly not at the exterior "of the IC package" (element 2) because they are situated beneath the heat dissipating structure. See Examiner's diagram (reproduced from Huang Fig. 1) (showing Examiner's note as to where the balls were exposed).

In contrast, one embodiment of the present invention is depicted by Figure 3G from the application.

FIG 3G

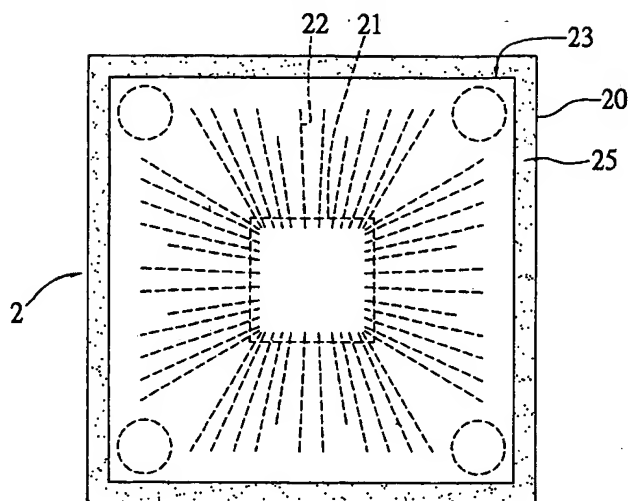


Here, it is obvious that the balls (134) are exposed to the exterior of the package (120) at the point farthest from the substrate (122).

**III. The Examiner's interpretation of Huang is contradicted by Figure 2 from Huang.**

The fact that the balls taught in Huang are not exposed is further supported by Figure 2 in Huang. Figure 2 is depicted below:

FIG. 2



Here, Huang depicts an integrated circuit package. Four balls are depicted by four circles. Significantly, the balls are drawn with hidden lines, *cf.* MPEP 608.02, part IX, and are depicted beneath the heat dissipating structure (23). It is therefore obvious from this drawing that the balls are not exposed at the top of the integrated circuit package (2).

### Conclusion

Because Huang does not teach the limitation from that the “portions of said balls that are disposed farthest from the substrate are exposed at *an exterior of said integrated circuit package* [emphasis added],” Huang does not anticipate Claim 13.

Because Huang does not teach this limitation, Huang also does not anticipate Claims 15-17, 20-22 and 25, all of which are dependent on Claim 13. Moreover, because Huang, in combination with Huang II, does not teach this limitation for these same reasons, Claim 23 is not obvious over Huang in view of Huang II.

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Page 5 of 5.

Accordingly, Applicants respectfully request withdrawal of these rejections and allowance of the claims.

Dated: August 14, 2006

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Michael A. Molano', with a stylized, wavy line for the first part and a horizontal line for the last part.

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